

1999 DOCTORATE PROFILE

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Table 1. Distribution of doctoral scientists and engineers, by field of doctorate: 1999

September 2002

Field of doctorate	Number	Percent
Total.....	626,700	100
Sciences.....	519,496	83
Computer and mathematical sciences.....	38,400	6
Computer/information sciences.....	9,700	2
Mathematical sciences.....	28,700	5
Biological and agricultural sciences.....	153,000	24
Agricultural/food sciences.....	19,300	3
Biological sciences.....	128,100	20
Environmental life sciences.....	5,700	1
Health sciences.....	21,400	3
Physical and related sciences.....	128,400	20
Chemistry except biochemistry.....	66,700	11
Earth/atmospheric/ocean sciences.....	18,400	3
Physics and astronomy.....	43,300	7
Social sciences.....	85,100	14
Economics.....	24,300	4
Political and related sciences.....	18,600	3
Sociology.....	15,600	2
Other social sciences.....	26,600	4
Psychology.....	93,100	15
Engineering.....	107,202	17
Aerospace/aeronautical engineering.....	4,700	1
Chemical engineering.....	14,800	2
Civil engineering.....	9,400	2
Electrical/computer engineering.....	28,500	5
Materials/metallurgical engineering.....	11,200	2
Mechanical engineering.....	14,000	2
Other engineering.....	24,500	4

NOTES: Numbers are rounded to nearest hundred. Percents are rounded to the whole number.

Details may not add to totals because of rounding. Survey of Doctorate Recipients includes persons who had earned a research doctorate from an U.S. institution and resided in U.S. as of April 1999.

SOURCE: National Science Foundation/Division of Science Resources Statistics, 1999 Survey of Doctorate Recipients.

Table 2. Demographic characteristics of doctoral scientists and engineers, by field of doctorate: 1999

September 2002

Demographic characteristic	Field of doctorate								
	All fields	Computer and information sciences	Mathematical sciences	Biological and agricultural sciences	Health sciences	Physical and related sciences	Social sciences	Psychology	Engineering
Total (number).....	626,700	9,700	28,700	153,000	21,400	128,400	85,100	93,100	107,200
Year of doctorate	Percent								
Pre-1960.....	4	S	4	4	S	7	3	3	3
1960-69.....	14	S	19	13	5	19	12	10	15
1970-79.....	25	S	31	25	18	25	31	26	22
1980-84.....	13	10	10	14	14	11	14	17	10
1985-89.....	14	22	10	14	16	13	13	16	14
1990-92.....	10	20	8	9	15	9	8	10	11
1993-94.....	7	15	7	7	10	6	7	7	8
1995-96.....	8	17	6	8	11	6	7	7	10
1997-98.....	6	11	5	6	9	5	5	5	7
Sex									
Male.....	76	83	86	73	46	87	71	54	93
Female.....	24	17	14	27	54	13	29	46	7
Race/ethnicity									
White ¹	81	67	80	83	82	82	85	91	67
Black.....	2	S	S	2	5	1	4	3	1
Asian/Pacific Islander.....	14	29	16	12	9	15	8	2	29
Hispanic.....	2	S	S	2	S	2	3	3	2
American Indian/Alaskan Native.....	--	S	S	S	S	S	S	S	S
Age									
Under 35.....	9	15	10	10	6	9	5	7	13
35-39.....	13	28	11	14	9	14	9	10	17
40-44.....	14	24	12	16	12	14	12	14	15
45-49.....	15	19	12	16	20	12	16	19	12
50-54.....	15	10	15	14	22	13	18	20	11
55-59.....	14	S	19	12	16	15	17	13	13
60-64.....	9	S	10	7	7	10	10	7	10
65-75.....	11	S	11	11	8	13	14	10	9
Citizenship status									
U.S. citizen.....	90	73	86	91	93	90	92	98	81
Non-U.S. citizen.....	10	27	14	9	7	10	8	2	19
Permanent U.S. resident.....	77	78	73	75	75	79	82	80	75
Temporary U.S. resident.....	23	22	27	25	25	21	18	20	25

¹ 'Other' race included with 'White'.

KEY: -- = Percent < 0.5 and estimated weighted cases >= 1,000.

S = Suppressed due to too few cases (fewer than 1,000 weighted cases).

NOTES: Race/ethnicity data are shown for all doctorate recipients, including temporary residents. Numbers are rounded to nearest hundred. Percents are rounded to the whole number. Details may not add to totals because of rounding. Survey of Doctorate Recipients includes persons who had earned a research doctorate from an U.S. institution and resided in U.S. as of April 1999.

SOURCE: National Science Foundation/Division of Science Resources Statistics, 1999 Survey of Doctorate Recipients

Table 3. Demographic characteristics of doctoral scientists and engineers, by years since doctorate: 1999

September 2002

Demographic characteristic	Years since doctorate				
	Total	5 years or less	6-15 years	16-25 years	More than 25 years
Total (number).....	626,700	108,600	187,600	157,000	173,500
Sex	Percent				
Male.....	76	64	68	77	91
Female.....	24	36	32	23	9
Race/ethnicity					
White ¹	81	67	76	86	91
Black.....	2	3	3	2	1
Asian/Pacific Islander.....	14	26	17	10	7
Hispanic.....	2	3	3	2	1
American Indian/Alaskan Native.....	--	S	S	S	S
Citizenship status					
U.S. citizen.....	90	71	86	98	99
Non-U.S. citizen.....	10	29	14	2	1

¹ 'Other' race included with 'White'.

KEY: -- = Percent < 0.5 and estimated weighted cases >= 1,000.

S = Suppressed due to too few cases (fewer than 1,000 weighted cases).

NOTES: Race/ethnicity data are shown for all doctorate recipients, including temporary residents. Numbers are rounded to nearest hundred. Percents are rounded to the whole number. Details may not add to totals because of rounding. Survey of Doctorate Recipients includes persons who had earned a research doctorate from an U.S. institution and resided in U.S. as of April 1999.

SOURCE: National Science Foundation/Division of Science Resources Statistics, 1999 Survey of Doctorate Recipients

Table 4. Employment status of doctoral scientists and engineers, by field of doctorate: 1999

September 2002

Employment status	Field of doctorate							
	All fields	Computer and mathematical sciences	Biological and agricultural sciences	Health sciences	Physical and related sciences	Social sciences	Psychology	Engineering
Total (number).....	626,700	38,400	153,000	21,400	128,400	85,100	93,100	107,200
	Percent							
Employed full-time ¹	82	86	83	83	81	80	75	86
Employed part-time ¹	7	5	5	7	5	7	15	3
Unemployed, seeking employment.....	1	S	1	S	1	S	S	1
Retired.....	9	7	9	7	11	10	6	8
Not employed, not seeking.....	2	S	3	S	2	2	3	1

¹ Includes those who held postdoctoral appointments.

KEY: S = Suppressed due to too few cases (fewer than 1,000 weighted cases).

NOTES: Numbers are rounded to nearest hundred. Percents are rounded to the whole number. Details may not add to totals because of rounding.

Survey of Doctorate Recipients includes persons who had earned a research doctorate from an U.S. institution and resided in U.S. as of April 1999.

SOURCE: National Science Foundation/Division of Science Resources Statistics, 1999 Survey of Doctorate Recipients

Table 5. Reasons for not working as reported by doctoral scientists and engineers, by age: 1999

September 2002

Reasons for not working	All ages	Under 65	65-75
Total not employed (number).....	73,300	31,900	41,400
		Percent	
Retired.....	74	43	98
On layoff.....	5	10	S
Student.....	2	6	S
Family responsibilities.....	10	21	S
Ill or disabled.....	5	9	3
Suitable job not available.....	8	15	S
No need or desire to work.....	13	18	9
Other reason.....	4	7	S

KEY: S = Suppressed due to too few cases (fewer than 1,000 weighted cases).

NOTES: Numbers are rounded to nearest hundred. Percents are rounded to the whole number. Details may not add to totals because of rounding, and because multiple answers are allowed. Survey of Doctorate Recipients includes persons who had earned a research doctorate from an U.S. institution and resided in U.S. as of April 1999.

SOURCE: National Science Foundation/Division of Science Resources Statistics, 1999 Survey of Doctorate Recipients

Table 6. Reasons for working part-time as reported by doctoral scientists and engineers, by age: 1999

September 2002

Reason for working part-time	All ages	Under 65	65-75
Total employed part-time (number).....	41,700	31,600	10,200
		Percent	
Retired or semi-retired.....	33	17	85
Student.....	2	3	S
Family responsibilities.....	28	37	S
Ill/disabled.....	4	5	S
Suitable full-time job not available.....	17	20	S
No need or desire for full-time work.....	43	45	38
Other reason.....	8	8	S

KEY: S = Suppressed due to too few cases (fewer than 1,000 weighted cases).

NOTES: Numbers are rounded to nearest hundred. Percents are rounded to the whole number. Details may not add to total because of rounding and because multiple answers were allowed. Survey of Doctorate Recipients includes persons who had earned a research doctorate from an U.S. institution and resided in U.S. as of April 1999.

SOURCE: National Science Foundation/Division of Science Resources Statistics, 1999 Survey of Doctorate Recipients

Table 7. Employment status of doctoral scientists and engineers, by field of doctorate and sex: 1999

September 2002

Employment status and sex	Field of doctorate							
	All fields	Computer and mathematical sciences	Biological and agricultural sciences	Health sciences	Physical and related sciences	Social sciences	Psychology	Engineering
Total in labor force (number).....	559,900	35,100	135,900	19,600	111,900	75,100	85,200	97,100
	Percent							
Employed full-time ¹	91	94	93	91	93	91	82	95
Employed part-time ¹	7	5	6	8	6	8	17	4
Unemployed, seeking employment.....	1	S	1	S	1	S	S	1
Male (number).....	424,400	30,000	98,800	8,800	97,600	52,600	46,100	90,600
	Percent							
Employed full-time ¹	94	95	95	94	93	92	89	95
Employed part-time ¹	5	4	4	S	5	7	10	4
Unemployed, seeking employment.....	1	S	S	S	1	S	S	1
Female (number).....	135,500	5,100	37,100	10,700	14,300	22,600	39,100	6,500
	Percent							
Employed full-time ¹	84	88	88	88	91	86	74	90
Employed part-time ¹	14	S	10	11	S	12	25	S
Unemployed, seeking employment.....	1	S	S	S	S	S	S	S

¹ Includes those who held postdoctoral appointments.

KEY: S = Suppressed due to too few cases (fewer than 1,000 weighted cases).

NOTES: Numbers are rounded to nearest hundred. Percents are rounded to the whole number. Details may not add to totals because of rounding, because of rounding, and because multiple answers were allowed. Survey of Doctorate Recipients includes persons who had earned a research doctorate from an U.S. institution and resided in U.S. as of April 1999.

SOURCE: National Science Foundation/Division of Science Resources Statistics, 1999 Survey of Doctorate Recipients

Table 8. Retired doctoral scientists and engineers, by field of doctorate and age: 1999

September 2002

Age	Field of doctorate							
	All fields	Computer and mathematical sciences	Biological and agricultural sciences	Health sciences	Physical and related sciences	Social sciences	Psychology	Engineering
Total retired (number).....	54,300	2,700	13,400	1,500	14,200	8,200	5,500	8,700
Age group	Percent							
Under 65.....	25	S	23	S	25	20	26	31
65-75.....	75	71	77	72	75	80	74	69

KEY: S = Suppressed due to too few cases (fewer than 1,000 weighted cases).

NOTES: Numbers are rounded to nearest hundred. Percents are rounded to the whole number. Details may not add to totals because of rounding.

Survey of Doctorate Recipients includes persons who had earned a research doctorate from an U.S. institution and resided in U.S. as of April 1999.

SOURCE: National Science Foundation/Division of Science Resources Statistics, 1999 Survey of Doctorate Recipients

Table 9. Employment sector of doctoral scientists and engineers, by field of doctorate: 1999

September 2002

Employment sector	Field of doctorate								
	All fields	Computer and information sciences	Mathematical sciences	Biological and agricultural sciences	Health sciences	Physical and related sciences	Social sciences	Psychology	Engineering
Total employed (number).....	553,400	9,600	25,300	134,400	19,300	110,300	74,300	84,300	95,900
				Percent					
Education institution.....	46	39	62	56	58	37	66	40	28
Private industry.....	39	55	31	31	29	50	20	30	61
Government.....	9	S	5	11	8	10	9	10	8
Self-employed or other.....	5	S	S	3	S	2	5	19	3

KEY: S = Suppressed due to too few cases (fewer than 1,000 weighted cases).

NOTES: Numbers are rounded to nearest hundred. Percents are rounded to the whole number. Details may not add to totals because of rounding.
Survey of Doctorate Recipients includes persons who had earned a research doctorate from an U.S. institution and resided in U.S. as of April 1999.

SOURCE: National Science Foundation/Division of Science Resources Statistics, 1999 Survey of Doctorate Recipients

Table 10. Employer characteristics of doctoral scientists and engineers, by field of doctorate: 1999

September 2002

Employer characteristic	Field of doctorate							
	All fields	Computer and mathematical sciences	Biological and agricultural sciences	Health sciences	Physical and related sciences	Social sciences	Psychology	Engineering
Total employed (number).....	553,400	34,900	134,400	19,300	110,300	74,300	84,300	95,900
Employer size	Percent							
Under 10 employees.....	10	5	7	9	7	8	28	8
10-24 employees.....	3	S	3	S	2	2	3	3
25-99 employees.....	4	4	4	S	5	4	4	5
100-499 employees.....	10	12	9	8	10	11	11	8
500-999 employees.....	5	5	4	S	5	6	6	4
1,000-4,999 employees.....	11	11	11	12	11	10	8	12
5,000 or more employees.....	57	61	62	61	59	59	39	60
Employer a new business within past 5 years?								
Yes.....	6	6	5	6	6	4	7	9
No.....	94	94	95	94	94	96	93	91

KEY: S = Suppressed due to too few cases (fewer than 1,000 weighted cases).

NOTES: Numbers are rounded to nearest hundred. Percents are rounded to the whole number. Details may not add to totals because of rounding.

Survey of Doctorate Recipients includes persons who had earned a research doctorate from an U.S. institution and resided in U.S. as of April 1999.

SOURCE: National Science Foundation/Division of Science Resources Statistics, 1999 Survey of Doctorate Recipients

Table 11. Relationship between work on principal job and doctoral degree as reported by doctoral scientists and engineers, by field of doctorate: 1999

September 2002

Relationship between principal job and doctoral degree	Field of doctorate								
	All fields	Computer and information sciences	Mathematical sciences	Biological and agricultural sciences	Health sciences	Physical and related sciences	Social sciences	Psychology	Engineering
Total employed (number).....	553,400	9,600	25,300	134,400	19,300	110,300	74,300	84,300	95,900
					Percent				
Closely related.....	68	74	66	69	78	58	72	82	63
Somewhat related.....	24	23	25	23	18	31	20	15	30
Not related.....	8	S	9	7	S	11	7	4	8

KEY: S = Suppressed due to too few cases (fewer than 1,000 weighted cases).

NOTES: Numbers are rounded to nearest hundred. Percents are rounded to the whole number. Details may not add to totals because of rounding.

Survey of Doctorate Recipients includes persons who had earned a research doctorate from an U.S. institution and resided in U.S. as of April 1999.

SOURCE: National Science Foundation/Division of Science Resources Statistics, 1999 Survey of Doctorate Recipients

Table 12. Most important reason for doctoral scientists and engineers to be working outside field of doctoral degree: 1999

September 2002

Most important reason	All fields
Total reporting working outside doctoral degree field (number).....	42,000
	Percent
Pay/promotion opportunities.....	24
Working conditions.....	4
Job location.....	5
Change in career or professional interest.....	30
Family-related reasons.....	6
Job in doctoral field not available.....	24
Other reason.....	7

NOTES: Numbers are rounded to nearest hundred. Percents are rounded to the whole number. Details may not add to total because of rounding. Survey of Doctorate Recipients includes persons who had earned a research doctorate from an U.S. institution and resided in U.S. as of April 1999.

SOURCE: National Science Foundation/Division of Science Resources Statistics, 1999 Survey of Doctorate Recipients

Table 13. Primary work activity of doctoral scientists and engineers, by years since doctorate: 1999

September 2002

Primary work activity	Years since doctorate				
	Total	5 years or less	6-15 years	16-25 years	More than 25 years
Total employed (number).....	553,400	104,400	179,700	147,600	121,600
			Percent		
Applied research.....	20	25	23	18	16
Basic research.....	13	18	13	10	10
Development.....	6	7	6	5	5
Design.....	2	3	2	2	2
Teaching.....	21	18	20	21	27
Management, sales, and administration ¹	17	8	15	23	23
Computer applications.....	6	9	6	5	4
Professional services.....	12	10	13	15	11
Other activity ²	2	2	2	2	3

¹ Category includes: accounting, finance, contracts; employee relations including recruiting, personnel, development, and training; managing, supervising; sales, purchasing, marketing, customer service, public relations; and quality or productivity management.

² Category includes: production operations, maintenance, and other activity.

NOTES: Numbers are rounded to nearest hundred. Percents are rounded to the whole number. Details may not add to totals because of rounding.

Survey of Doctorate Recipients includes persons who had earned a research doctorate from an U.S. institution and resided in U.S. as of April 1999.

SOURCE: National Science Foundation/Division of Science Resources Statistics, 1999 Survey of Doctorate Recipients

Table 14. Principal occupation of doctoral scientists and engineers, by employment sector: 1999

September 2002

Principal occupation	Employment sector							
	Total	University and 4-year college	Other educational institution	Private for-profit company	Self-employed	Private not-for-profit organization	Federal Government	State/local government
Total employed (number).....	553,400	236,400	19,400	187,500	30,400	27,500	37,300	14,900
					Percent			
Science and engineering occupations.....	75	83	61	69	71	64	80	65
Computer and information scientists.....	6	3	S	12	S	S	3	S
Mathematical scientists.....	4	6	S	1	S	S	4	S
Life and related scientists.....	19	27	13	11	6	15	25	12
Physical and related scientists.....	14	14	13	14	4	8	22	9
Social and related scientists.....	8	14	8	2	4	6	7	S
Psychologists.....	12	9	19	6	49	23	6	29
Engineers.....	13	9	S	23	6	7	14	S
Non-science and engineering occupations.....	25	17	39	31	29	36	20	35
Top/mid-level managers, administrators, etc.....	12	6	13	19	6	19	13	21
Other non-S&E occupations.....	13	11	26	12	24	17	7	13

KEY: S = Suppressed due to too few cases (fewer than 1,000 weighted cases).

NOTES: Numbers are rounded to nearest hundred. Percents are rounded to the whole number. Details may not add to totals because of rounding.

Survey of Doctorate Recipients includes persons who had earned a research doctorate from an U.S. institution and resided in U.S. as of April 1999.

SOURCE: National Science Foundation/Division of Science Resources Statistics, 1999 Survey of Doctorate Recipients

Table 15. Principal occupation of doctoral scientists and engineers, by years since doctorate: 1999

September 2002

Principal occupation	Years since doctorate				
	Total	5 years or less	6-15 years	16-25 years	More than 25 years
Total employed (number).....	553,400	104,400	179,700	147,600	121,600
			Percent		
Science and engineering occupations.....	75	83	78	71	70
Computer and information scientists.....	6	8	6	5	4
Mathematical scientists.....	4	3	4	3	4
Life and related scientists.....	19	22	20	18	16
Physical and related scientists.....	14	13	14	12	16
Social and related scientists.....	8	8	8	9	8
Psychologists.....	12	11	13	13	9
Engineers.....	13	18	14	10	13
Non-science and engineering occupations.....	25	17	22	29	30
Top/mid-level managers, administrators, etc.....	12	5	9	16	17
Other non-S&E occupations.....	13	13	13	13	12

NOTES: Numbers are rounded to nearest hundred. Percents are rounded to the whole number. Details may not add to totals because of rounding.

Survey of Doctorate Recipients includes persons who had earned a research doctorate from an U.S. institution and resided in U.S. as of April 1999.

SOURCE: National Science Foundation/Division of Science Resources Statistics, 1999 Survey of Doctorate Recipients

Table 16. Federal Government support status of employed science and engineering doctorates, by field of doctorate: 1999

September 2002

Support status	Field of doctorate								
	All fields	Computer and information sciences	Mathematical sciences	Biological and agricultural sciences	Health sciences	Physical and related sciences	Social sciences	Psychology	Engineering
Total employed in 1999 (number).....	553,400	9,600	25,300	134,400	19,300	110,300	74,300	84,300	95,900
Total employed in 1998 (number)....	547,800	9,500	24,900	133,300	19,000	109,500	73,700	83,400	94,500
					Percent				
Received government support.....	31	31	26	40	30	34	22	20	32
No government support.....	69	69	74	60	70	66	78	80	68

NOTES: Data are based on a question that asked whether any of the work during 1998 was supported by contracts or grants from the U.S. government.

Numbers are rounded to nearest hundred. Percents are rounded to the whole number. Details may not add to total because of rounding.

Survey of Doctorate Recipients includes persons who had earned a research doctorate from an U.S. institution and resided in U.S. as of April 1999.

SOURCE: National Science Foundation/Division of Science Resources Statistics, 1999 Survey of Doctorate Recipients

Table 17. Federal Government support status of employed doctoral scientists and engineers, by employment sector: 1999

September 2002

Support status	Total	Employment sector						
		Universities and 4-year colleges	Other educational institutions	Private for-profit	Self-employed	Private not-for-profit	Federal Government	State and local government
Total employed in 1999 (number).....	553,400	236,400	19,400	187,500	30,400	27,500	37,300	14,900
Total employed in 1998 (number).....	547,800	234,500	19,200	184,900	29,900	27,300	37,100	14,800
					Percent			
Received government support.....	31	47	16	19	10	46	S	33
No government support.....	69	53	84	81	90	54	99	67

KEY: S = Suppressed due to too few cases (fewer than 1,000 weighted cases).

NOTES: Data are based on a question that asked whether any of the work during 1998 was supported by contracts or grants from the U.S. government.

Numbers are rounded to nearest hundred. Percents are rounded to the whole number. Details may not add to total because of rounding.

Survey of Doctorate Recipients includes persons who had earned a research doctorate from an U.S. institution and resided in U.S. as of April 1999.

SOURCE: National Science Foundation/Division of Science Resources Statistics, 1999 Survey of Doctorate Recipients

Table 18. Federal agencies and departments supporting work of doctoral scientists and engineers: 1999

September 2002	
Federal agency or department	All fields
Total receiving Federal Government support (number).....	168,200
	Percent
Agency for International Development (AID).....	1
Agriculture Department.....	8
Commerce Department.....	3
Defense Department (DoD).....	20
Department of Education (includes NCES, OERI, FIPSE, FIRST).....	3
Energy Department (DOE).....	12
Environmental Protection Agency (EPA).....	5
Health and Human Services Department (excluding NIH).....	9
Interior Department.....	3
National Aeronautics and Space Administration (NASA).....	9
National Institutes of Health (NIH).....	31
National Science Foundation (NSF).....	21
Transportation Department (DOT).....	3
Other.....	5

NOTES: Data are based on questions that asked whether any of the work during 1998 was supported by contracts or grants from the U.S. government and the agencies or departments that supported the work. Percents are rounded to the whole number. Details may not add to total because multiple answers were allowed. Survey of Doctorate Recipients includes persons who had earned a research doctorate from an U.S. institution and resided in U.S. as of April 1999.

SOURCE: National Science Foundation/Division of Science Resources Statistics, 1999 Survey of Doctorate Recipients

Table 19. Academically employed doctoral scientists and engineers, by field of doctorate and faculty rank: 1999

September 2002

Faculty rank	Field of doctorate								
	All fields	Computer and information sciences	Mathematical sciences	Biological and agricultural sciences	Health sciences	Physical and related sciences	Social sciences	Psychology	Engineering
Total employed in academe (number).....	244,900	3,700	15,400	72,500	10,900	39,100	47,700	29,500	26,200
	Percent								
Professor.....	35	S	44	30	23	37	40	33	42
Associate professor.....	22	38	28	20	29	17	26	21	23
Assistant professor.....	19	31	17	18	30	16	19	21	17
Instructor, lecturer, adjunct faculty.....	6	S	S	7	S	6	7	7	5
Not applicable at institution.....	2	S	S	S	S	4	S	S	S
Not applicable for position.....	15	S	S	24	12	20	7	15	10

KEY: S = Suppressed due to too few cases (fewer than 1,000 weighted cases).

NOTES: Academe includes 2-year and 4-year colleges, universities, medical schools, and university-affiliated research institutes. Those on postdoctoral appointments are also included in this table, mostly under "not applicable for position". Numbers are rounded to nearest hundred. Percents are rounded to the whole number. Details may not add to total because of rounding. Survey of Doctorate Recipients includes persons who had earned a research doctorate from an U.S. institution and resided in U.S. as of April 1999.

SOURCE: National Science Foundation/Division of Science Resources Statistics, 1999 Survey of Doctorate Recipients

Table 20. Academically employed doctoral scientists and engineers, by years since doctorate, sex, and faculty rank: 1999

September 2002

Sex and faculty rank	Years since doctorate				
	Total	5 years or less	6-15 years	16-25 years	More than 25 years
Total employed in academe (number).....	244,900	47,100	78,100	61,200	58,500
			Percent		
Professor.....	35	S	11	55	75
Associate professor.....	22	4	39	26	12
Assistant professor.....	19	42	28	5	S
Instructor, lecturer, adjunct faculty.....	6	9	7	5	5
Not applicable at institution.....	2	S	2	2	S
Not applicable for position.....	15	42	13	8	5
Male (number).....	179,700	28,100	51,500	47,300	52,700
			Percent		
Professor.....	41	S	12	58	76
Associate professor.....	22	4	41	25	11
Assistant professor.....	16	43	27	4	S
Instructor, lecturer, adjunct faculty.....	5	7	6	5	4
Not applicable at institution.....	2	S	2	S	S
Not applicable for position.....	14	43	12	7	5
Female (number).....	65,200	19,000	26,600	13,900	5,800
			Percent		
Professor.....	19	S	9	43	60
Associate professor.....	23	S	34	31	16
Assistant professor.....	27	41	31	8	S
Instructor, lecturer, adjunct faculty.....	9	12	8	7	S
Not applicable at institution.....	2	S	S	S	S
Not applicable for position.....	21	39	16	10	S

KEY: S = Suppressed due to too few cases (fewer than 1,000 weighted cases).

NOTES: Academe includes 2-year and 4-year colleges, universities, medical schools, and university-affiliated research institutes. Those on postdoctoral appointments are also included in this table, mostly under "not applicable for position". Numbers are rounded to nearest hundred. Percents are rounded to the whole number. Details may not add to total because of rounding. Survey of Doctorate Recipients includes persons who had earned a research doctorate from an U.S. institution and resided in U.S. as of April 1999.

SOURCE: National Science Foundation/Division of Science Resources Statistics, 1999 Survey of Doctorate Recipients

Table 21. Academically employed doctoral scientists and engineers, by field of doctorate and tenure status: 1999

September 2002

Tenure status	Field of doctorate								
	All fields	Computer and information sciences	Mathematical sciences	Biological and agricultural sciences	Health sciences	Physical and related sciences	Social sciences	Psychology	Engineering
Total employed in academe (number).....	244,900	3,700	15,400	72,500	10,900	39,100	47,700	29,500	26,200
	Percent								
Tenured.....	52	52	70	43	43	49	63	48	58
On tenure track.....	16	30	13	15	25	14	16	14	16
Not on tenure track.....	11	S	8	14	13	10	7	13	9
No tenure system at institution.....	5	S	S	4	S	6	3	7	5
No tenure for position.....	17	S	7	24	14	21	11	19	12

KEY: S = Suppressed due to too few cases (fewer than 1,000 weighted cases).

NOTES: Academe includes 2-year and 4-year colleges, universities, medical schools, and university-affiliated research institutes. Those on postdoctoral appointments are also included in this table, mostly under "not applicable for position". Numbers are rounded to nearest hundred. Percents are rounded to the whole number. Details may not add to total because of rounding. Survey of Doctorate Recipients includes persons who had earned a research doctorate from an U.S. institution and resided in U.S. as of April 1999.

SOURCE: National Science Foundation/Division of Science Resources Statistics, 1999 Survey of Doctorate Recipients

Table 22. Academically employed doctoral scientists and engineers, by years since doctorate, sex, and tenure status: 1999

September 2002

Sex and tenure status	Years since doctorate				
	Total	5 years or less	6-15 years	16-25 years	More than 25 years
Total employed in academe (number).....	244,900	47,100	78,100	61,200	58,500
			Percent		
Tenured.....	52	3	43	73	80
On tenure track.....	16	34	24	4	1
Not on tenure track.....	11	21	12	8	5
No tenure system at institution.....	5	4	5	5	4
No tenure for position.....	17	37	16	10	9
Male (number).....	179,700	28,100	51,500	47,300	52,700
			Percent		
Tenured.....	57	S	46	75	82
On tenure track.....	14	37	25	3	S
Not on tenure track.....	9	19	10	7	5
No tenure system at institution.....	5	4	4	6	4
No tenure for position.....	15	36	14	9	9
Female (number).....	65,200	19,000	26,600	13,900	5,800
			Percent		
Tenured.....	36	S	37	65	69
On tenure track.....	20	30	23	S	S
Not on tenure track.....	16	22	15	10	S
No tenure system at institution.....	5	S	5	S	S
No tenure for position.....	24	39	20	15	S

KEY: S = Suppressed due to too few cases (fewer than 1,000 weighted cases).

NOTES: Academe includes 2-year and 4-year colleges, universities, medical schools, and university-affiliated research institutes. Those on postdoctoral appointments are also included in this table, mostly under "not applicable for position". Numbers are rounded to nearest hundred. Percents are rounded to the whole number. Details may not add to total because of rounding. Survey of Doctorate Recipients includes persons who had earned a research doctorate from an U.S. institution and resided in U.S. as of April 1999.

SOURCE: National Science Foundation/Division of Science Resources Statistics, 1999 Survey of Doctorate Recipients

Table 23. Characteristics of doctoral scientists and engineers on postdoc, by selected field of doctorate: 1999

September 2002

Demographic characteristic	Field of doctorate		
	All fields	Biological and agricultural sciences	Other fields
Total postdocs (number).....	24,000	14,300	9,700
		Percent	
Years since doctorate			
5 years or less.....	83	81	85
6-10 years.....	16	18	12
11-15 years.....	S	S	S
More than 15 years.....	S	S	S
Sex			
Male.....	60	56	65
Female.....	40	44	35
Race/ethnicity			
White ¹	64	62	68
Black.....	S	S	S
Asian/Pacific Islander.....	28	32	23
Hispanic.....	4	S	S
American Indian/Alaskan Native.....	S	S	S
Age			
Under 35.....	52	48	57
35-44.....	41	45	35
45-75.....	7	S	S
Citizenship status			
U.S. citizen.....	67	66	67
Non-U.S. citizen.....	33	34	33
Employment sector			
Educational institution.....	78	79	76
Business/industry.....	11	11	10
Other.....	11	10	14

¹ 'Other' race included with 'White'.

KEY: -- = Percent < 0.5 and estimated weighted cases >= 1,000.

S = Suppressed due to too few cases (fewer than 1,000 weighted cases).

NOTES: Race/ethnicity data are shown for all doctorate recipients, including temporary residents. Numbers are rounded to nearest hundred. Percents are rounded to the whole number. Details may not add to total because of rounding. Survey of Doctorate Recipients includes persons who had earned a research doctorate from an U.S. institution and resided in U.S. as of April 1999.

SOURCE: National Science Foundation/Division of Science Resources Statistics, 1999 Survey of Doctorate Recipients

**Table 24. Primary reason for holding postdoc for doctoral scientists and engineers,
by selected field of doctorate: 1999**

September 2002

Reason	Field of doctorate		
	All fields	Biological and agricultural sciences	Other fields
Total postdocs (number).....	24,000	14,300	9,700
Primary reason for holding postdoc	Percent		
Additional training in field.....	18	16	20
Training out of field.....	11	10	13
Work with specific person or place.....	20	20	21
No other employment available.....	16	15	18
Postdoc generally expected for career in this field.....	32	37	24
Other reason.....	S	S	S

KEY: S = Suppressed due to too few cases (fewer than 1,000 weighted cases).

NOTES: Postdoc is a temporary position awarded in academe, industry or government primarily for gaining additional education and training in research. Numbers are rounded to nearest hundred. Percents are rounded to the whole number. Details may not add to total because of rounding. Survey of Doctorate Recipients includes persons who had earned a research doctorate from an U.S. institution and resided in U.S. as of April 1999.

SOURCE: National Science Foundation/Division of Science Resources Statistics, 1999 Survey of Doctorate Recipients

Table 25. Second job status of doctoral scientists and engineers, by employment sector of principal job: 1999

September 2002

Second job status and occupation	Employment sector of principal job							
	All sectors	Universities and 4-year colleges	Other educational institutions	Private for-profit	Self-employed	Private not-for-profit	Federal Government	State and local government
Total employed (number).....	553,400	236,400	19,400	187,500	30,400	27,500	37,300	14,900
	Percent							
Held second job.....	13	15	29	8	16	20	9	25
No second job.....	87	85	71	92	84	80	91	75
Total holding second job (number).....	73,700	36,500	5,600	14,100	4,900	5,600	3,200	3,800
Occupation of second job	Percent							
Science and engineering occupations.....	63	62	66	57	57	68	73	76
Computer and information scientists.....	5	4	S	8	S	S	S	S
Mathematical scientists.....	3	4	S	S	S	S	S	S
Life and related scientists.....	8	10	S	S	S	S	S	S
Physical and related scientists.....	6	6	S	8	S	S	S	S
Social and related scientists.....	10	12	S	S	S	S	S	S
Psychologists.....	23	17	34	15	33	44	S	54
Engineers.....	8	9	S	12	S	S	S	S
Non-science and engineering occupation.....	37	38	34	43	43	32	S	S
Top/mid-level managers, administrators, etc.....	5	5	S	S	S	S	S	S
Other non-S&E occupations.....	32	33	30	37	37	28	S	S

KEY: S = Suppressed due to too few cases (fewer than 1,000 weighted cases).

NOTES: Numbers are rounded to nearest hundred. Percents are rounded to the whole number. Details may not add to total because of rounding.

Survey of Doctorate Recipients includes persons who had earned a research doctorate from an U.S. institution and resided in U.S. as of April 1999.

SOURCE: National Science Foundation/Division of Science Resources Statistics, 1999 Survey of Doctorate Recipients

**Table 26. Relationship of work on second job and doctoral degree by doctoral scientists and engineers,
by field of doctorate: 1999**

September 2002

Relationship	Field of doctorate							
	All fields	Computer and mathematical sciences	Biological and agricultural sciences	Health sciences	Physical and related sciences	Social sciences	Psychology	Engineering
Total holding second job (number).....	73,700	3,300	13,200	3,900	9,000	12,800	22,500	9,200
				Percent				
Closely related.....	65	54	51	61	48	69	83	61
Somewhat related.....	20	31	25	29	22	20	11	22
Not related.....	15	S	23	S	29	12	6	17

KEY: S = Suppressed due to too few cases (fewer than 1,000 weighted cases).

NOTES: Numbers are rounded to nearest hundred. Percents are rounded to the whole number. Details may not add to total because of rounding.

Survey of Doctorate Recipients includes persons who had earned a research doctorate from an U.S. institution and resided in U.S. as of April 1999.

SOURCE: National Science Foundation/Division of Science Resources Statistics, 1999 Survey of Doctorate Recipients

Table 27. Employment changes in doctoral scientists and engineers since 1997, by field of doctorate: 1999

September 2002

Employment change	Field of doctorate							
	All fields	Computer and mathematical sciences	Biological and agricultural sciences	Health sciences	Physical and related sciences	Social sciences	Psychology	Engineering
Total employed in 1999 (number).....	553,400	34,900	134,400	19,300	110,300	74,300	84,300	95,900
	Percent							
Not employed in 1997.....	4	4	5	S	4	4	3	4
No change since 1997.....	74	73	73	72	73	78	78	70
Change in employer and job.....	11	11	12	12	11	9	9	12
Change in employer only.....	5	7	5	6	5	5	5	7
Change in job only.....	6	5	6	7	7	6	5	7

KEY: S = Suppressed due to too few cases (fewer than 1,000 weighted cases)

NOTES: Numbers are rounded to nearest hundred. Percents are rounded to the whole number. Details may not add to total because of rounding.

Survey of Doctorate Recipients includes persons who had earned a research doctorate from an U.S. institution and resided in U.S. as of April 1999.

SOURCE: National Science Foundation/Division of Science Resources Statistics, 1999 Survey of Doctorate Recipients

**Table 28. Reasons for changing employer and/or job since 1997 for doctoral scientists and engineers,
by field of doctorate: 1999**

September 2002

Reasons	Field of doctorate							
	All fields	Computer and mathematical sciences	Biological and agricultural sciences	Health sciences	Physical and related sciences	Social sciences	Psychology	Engineering
Total changing employer and/or job (number).....	123,300	8,100	30,400	4,700	25,000	13,900	16,300	25,000
	Percent							
Pay or promotion opportunities.....	59	56	62	56	57	59	59	58
Working conditions.....	32	29	33	34	29	33	38	28
Job location.....	24	24	26	24	25	21	27	22
Change in career.....	30	29	30	28	33	29	25	32
Family-related reasons.....	13	S	14	S	11	13	19	9
School-related reasons.....	13	14	15	S	11	10	15	12
Laid off or job terminated.....	17	19	16	S	20	16	16	17
Retired.....	4	S	S	S	4	S	S	6
Other reason.....	5	S	3	S	5	7	S	4

KEY: S = Suppressed due to too few cases (fewer than 1,000 weighted cases).

NOTES: Numbers are rounded to nearest hundred. Percents are rounded to the whole number. Details may not add to total because of rounding and because multiple answers were allowed. Survey of Doctorate Recipients includes persons who had earned a research doctorate from an U.S. institution and resided in U.S. as of April 1999.

SOURCE: National Science Foundation/Division of Science Resources Statistics, 1999 Survey of Doctorate Recipients

Table 29. Professional society or association membership of doctoral scientists and engineers, by field of doctorate: 1999

September 2002

Number of memberships	Field of doctorate								
	All fields	Computer and information sciences	Mathematical sciences	Biological and agricultural sciences	Health sciences	Physical and related sciences	Social sciences	Psychology	Engineering
Total (number).....	626,700	9,700	28,700	153,000	21,400	128,400	85,100	93,100	107,200
	Percent								
None.....	19	27	25	19	10	20	20	16	21
One.....	21	20	24	17	15	26	15	23	25
Two.....	23	30	23	23	22	24	22	22	24
Three.....	16	12	15	16	20	15	19	18	15
Four or more.....	20	11	13	24	33	15	23	22	15

NOTES: Numbers are rounded to nearest hundred. Percents are rounded to the whole number. Details may not add to total because of rounding.

Survey of Doctorate Recipients includes persons who had earned a research doctorate from an U.S. institution and resided in U.S. as of April 1999.

SOURCE: National Science Foundation/Division of Science Resources Statistics, 1999 Survey of Doctorate Recipients

Table 30. Work-related training activities of doctoral scientists and engineers, by field of doctorate: 1999

September 2002

Training areas and reasons for taking training	Field of doctorate							
	All fields	Computer and mathematical sciences	Biological and agricultural sciences	Health sciences	Physical and related sciences	Social sciences	Psychology	Engineering
Total (number).....	626,700	38,400	153,000	21,400	128,400	85,100	93,100	107,200
	Percent							
Taken work-related training in the past year.....	55	45	54	70	48	50	71	54
Did not take work-related training.....	45	55	46	30	52	50	29	46
Total taking training (number).....	341,700	17,200	82,000	15,000	61,600	42,600	65,700	57,700
	Percent							
Type of training:								
Management/supervisor training.....	25	19	27	27	31	25	16	30
Training in occupational field.....	80	79	78	87	76	75	92	79
General professional training.....	21	20	21	24	21	26	15	23
Other work-related training.....	9	9	10	7	9	10	6	9
Most important reasons for taking training:								
To change occupational field.....	3	S	3	S	3	3	2	2
Further skills in occupational field.....	69	71	72	72	66	71	65	69
Licensure/certification.....	7	S	4	10	3	3	24	2
Increase opportunities.....	4	S	4	S	5	3	S	6
Learn skills for new position.....	6	6	6	S	8	5	3	8
Required or expected by employer.....	8	10	9	S	12	8	3	10
Other reasons.....	3	S	3	S	3	6	2	3

KEY: S = Suppressed due to too few cases (fewer than 1,000 weighted cases).

NOTES: Numbers are rounded to nearest hundred. Percents are rounded to the whole number. Details may not add to total because of rounding. Details will not add to total for types of work-related training because multiple answers were allowed. Survey of Doctorate Recipients includes persons who had earned research doctorate from U.S. institutions and resided in U.S. as of April 1999.

SOURCE: National Science Foundation/Division of Science Resources Statistics, 1999 Survey of Doctorate Recipients

Table 31. Most important resource used and length of time taken to find first career path job for recent doctoral recipients, by field of doctorate: 1999

September 2002

Resource and length of time	Field of doctorate							
	All fields	Computer and mathematical sciences	Biological and agricultural sciences	Health sciences	Physical and related sciences	Social sciences	Psychology	Engineering
Total recent doctoral recipients holding a career path job (number).....	42,600	2,800	10,600	2,300	6,900	5,000	6,000	9,000
Most important job search resource:	Percent							
Faculty or advisor.....	25	S	27	S	27	24	S	25
Informal channels through colleagues or friends.....	26	S	24	S	25	25	31	24
Professional meetings and/or journals.....	15	S	16	S	15	21	S	12
Other resource ¹	35	41	32	S	33	30	37	39
Length of time between completion of first doctoral degree and first career path job:								
Less than 1 month ²	72	79	70	72	71	73	67	75
1-6 months.....	19	S	21	S	18	S	22	18
7-12 months.....	6	S	S	S	S	S	S	S
More than 12 months.....	4	S	S	S	S	S	S	S

¹ 'Other resource' includes professional recruiter, college/department placement office, electronic postings, newspapers, direct contact with company, and other.

² Includes those who already held a career path job before completion of doctoral degree.

KEY: S = Suppressed due to too few cases (fewer than 1,000 weighted cases).

NOTES: 'Recent doctoral recipients' are those who reported having received their doctorate between July of 1996 and 1998. 'Career path job' is defined as a job that helps further one's career plans or a job in a field where one wants to make a career. Numbers are rounded to nearest hundred. Percents are rounded to the whole number. Details may not add to total because of rounding. Survey of Doctorate Recipients includes persons who had earned a research doctorate from an U.S. institution and resided in U.S. as of April 1999.

SOURCE: National Science Foundation/Division of Science Resources Statistics, 1999 Survey of Doctorate Recipients

Table 32. Factors that somewhat or greatly limited career path job search by recent doctoral recipients, by field of doctorate: 1999

September 2002

Factors limiting career path job search	Field of doctorate							
	All fields	Computer and mathematical sciences	Biological and agricultural sciences	Health sciences	Physical and related sciences	Social sciences	Psychology	Engineering
Total recent doctoral recipients seeking or holding a career path job (number).....	42,600	2,800	10,600	2,300	6,900	5,000	6,000	9,000
Factors that somewhat or greatly limited career path job search:	Percent							
Family responsibilities.....	39	39	44	S	39	31	38	37
Spouse's career or employment.....	37	39	42	S	35	37	35	34
Debt from undergraduate or graduate degree(s).....	17	S	19	S	S	S	30	13
Desire to not relocate.....	37	43	35	S	32	38	47	35
Suitable job not available.....	36	S	35	S	43	44	37	33
Other.....	5	S	S	S	S	S	S	S

KEY: S = Suppressed due to too few cases (fewer than 1,000 weighted cases).

NOTES: 'Recent doctoral recipients' are those who reported having received their doctorate between July of 1996 and 1998. 'Career path job' is defined as a job that helps further one's career plans or a job in a field where one wants to make a career. Numbers are rounded to nearest hundred. Percents are rounded to the whole number. Details may not add to total because of rounding and because multiple answers were allowed. Survey of Doctorate Recipients includes persons who had earned a research doctorate from an U.S. institution and resided in U.S. as of April 1999.

SOURCE: National Science Foundation/Division of Science Resources Statistics, 1999 Survey of Doctorate Recipients

Table 33. Areas of training in which recent doctoral recipients thought their doctoral program had somewhat or very adequately prepared them for a career, by field of doctorate: 1999

September 2002

Areas of doctoral training	Field of doctorate								
	All fields	Computer and information sciences	Mathematical sciences	Biological and agricultural sciences	Health sciences	Physical and related sciences	Social sciences	Psychology	Engineering
Total recent doctoral recipients (number).....	50,300	1,600	1,900	12,900	2,600	8,300	5,900	6,600	10,500
	Percent								
General problem solving skills.....	97	97	99	97	95	99	93	95	99
Subject matter knowledge.....	97	98	93	97	97	96	93	97	97
Oral communication skills.....	91	91	88	95	92	90	85	93	88
Teaching skills.....	72	68	82	68	74	72	76	76	71
Collaboration and teamwork skills.....	83	77	81	87	87	85	69	89	83
Quantitative skills.....	92	94	92	93	93	96	80	92	97
Writing skills.....	93	92	81	91	97	91	93	97	94
Computer skills.....	88	96	87	86	88	91	81	77	95
Research integrity/ethics.....	94	88	90	94	97	95	95	97	94
Establishing contacts with colleagues in field.....	78	75	71	79	88	76	79	77	77
Management or administrative skills.....	44	S	S	45	57	43	39	49	46

KEY: S = Suppressed due to too few cases (fewer than 1,000 weighted cases).

NOTES: 'Recent doctoral recipients' are those who reported having received their doctorate between July of 1996 and 1998. Numbers are rounded to nearest hundred. Percents are rounded to the whole number. Details may not add to total because of rounding and because multiple answers were allowed. Survey of Doctorate Recipients includes persons who had earned a research doctorate from an U.S. institution and resided in U.S. as of April 1999.

SOURCE: National Science Foundation/Division of Science Resources Statistics, 1999 Survey of Doctorate Recipients

Table 34. First area of the doctoral program in which recent doctoral recipients would have liked more training, by field of doctorate: 1999

September 2002

Doctoral program area	Field of doctorate							
	All fields	Computer and mathematical sciences	Biological and agricultural sciences	Health sciences	Physical and related sciences	Social sciences	Psychology	Engineering
Total recent doctoral recipients (number).....	50,300	3,600	12,900	2,600	8,300	5,900	6,600	10,500
Additional training desired (number).....	41,100	2,500	10,800	2,300	6,800	4,800	5,500	8,400
				Percent				
General problem solving skills.....	4	S	S	S	S	S	S	S
Subject matter knowledge.....	8	S	S	S	S	S	S	S
Oral communication skills.....	9	S	S	S	S	S	S	S
Teaching skills.....	15	S	16	S	S	23	19	S
Collaboration and teamwork skills.....	7	S	S	S	S	S	S	S
Quantitative skills.....	5	S	S	S	S	S	S	S
Writing skills.....	7	S	S	S	S	S	S	S
Computer skills.....	10	S	13	S	S	S	S	S
Research integrity/ethics.....	S	S	S	S	S	S	S	S
Establishing contacts with colleagues in field.....	16	S	13	S	19	S	S	17
Management or administrative skills.....	17	S	17	S	15	S	20	25

KEY: S = Suppressed due to too few cases (fewer than 1,000 weighted cases).

NOTES: 'Recent doctoral recipients' are those who reported having received their doctorate between July of 1996 and 1998.

Numbers are rounded to nearest hundred. Percents are rounded to the whole number. Details may not add to total because of rounding.

Survey of Doctorate Recipients includes persons who had earned a research doctorate from an U.S. institution and resided in U.S. as of April 1999.

SOURCE: National Science Foundation/Division of Science Resources Statistics, 1999 Survey of Doctorate Recipients

Table 35. Overall satisfaction with the doctoral program by recent doctoral recipients, by field of doctorate: 1999

September 2002

Level of overall satisfaction with doctoral program	Field of doctorate								
	All fields	Computer and information sciences	Mathematical sciences	Biological and agricultural sciences	Health sciences	Physical and related sciences	Social sciences	Psychology	Engineering
Total recent doctoral recipients (number).....	50,300	1,600	1,900	12,900	2,600	8,300	5,900	6,600	10,500
	Percent								
Very satisfied.....	62	S	66	60	66	61	56	62	67
Somewhat satisfied.....	32	S	S	33	S	33	35	32	30
Very/somewhat dissatisfied.....	S	S	S	S	S	S	S	S	S

KEY: S = Suppressed due to too few cases (fewer than 1,000 weighted cases).

NOTES: 'Recent doctoral recipients' are those who reported having received their doctorate between July of 1996 and 1998. Numbers are rounded to nearest hundred. Percents are rounded to the whole number. Details may not add to totals because of rounding. Survey of Doctorate Recipients includes persons who had earned a research doctorate from an U.S. institution and resided in U.S. as of April 1999.

SOURCE: National Science Foundation/Division of Science Resources Statistics, 1999 Survey of Doctorate Recipients